

WHAT IS CLAIMED IS:

1. A pressure production unit, comprising:
  - an air pump unit that produces pressurized air;
  - a drive source that drives the air pump unit;

5 a storage unit that stores a first correlation characteristic and a first ambient temperature, the first correlation characteristic indicating correlation between a drive frequency of the drive source and the air pressure of pressurized air produced in the air pump unit, the first ambient

10 temperature indicating an ambient temperature of the air pump unit when the first correlation characteristic is acquired;

  - a temperature sensing unit that senses ambient temperature of the air pump unit; and

15 a control unit configured to set the ambient temperature sensed by the temperature sensing unit as a second ambient temperature, to make a correction to the first correlation characteristic according to the first and second ambient temperatures, and to control the drive source on the basis of the corrected first correlation characteristic so that a

20 predetermined air pressure is produced.
2. The pressure production unit as claimed in claim 1,  
wherein the storage unit stores a second correlation characteristic indicating a correlation between duty ratio of  
25 a drive pulse for driving the drive source and the drive frequency

of the drive source; and

the control unit is configured to determine the drive frequency of the drive source on the basis of the corrected first correlation characteristic, and to determine the duty 5 ratio according to the drive frequency of the drive source and the second correlation characteristic.

3. The pressure production unit as claimed in claim 2,  
wherein the second correlation characteristic is acquired  
10 before the air pump and the drive source are assembled into  
the pressure production unit.

4. The pressure production unit as claimed in claim 1,  
wherein the first correlation characteristic and the  
15 first ambient temperature are acquired before the air pump and  
the drive source are assembled into the pressure production  
unit.

5. The pressure production unit as claimed in claim 1,  
20 wherein the air pump unit includes a diaphragm pump; and  
the control unit controls the drive frequency of the drive source  
so that the operation frequency of the diaphragm pump becomes  
less than the audible range of human hearing.

25 6. The pressure production unit as claimed in claim 5,

wherein the control unit controls the drive frequency of the drive source so that the operation frequency of the diaphragm pump becomes 20 Hz or less.

5 7. The pressure production unit as claimed in claim 1,  
wherein the air pump unit and the drive source make up  
an integral pump module.

.10 8. The pressure production unit as claimed in claim 1,  
wherein the air pump unit includes an air pump, an ejection tube communicated with the air pump and an orifice that communicates the ejection tube with the atmosphere.

.15 9. An ink jet printer, comprising:  
an ink cartridge that stores ink;  
a record head which selectively ejects the ink supplied from the ink cartridge onto a record medium;  
an air pump unit that produces pressurized air to be supplied to the ink cartridge to pressurize the ink;  
20 a drive source that drives the air pump unit;  
a storage unit that stores a first correlation characteristic and a first ambient temperature, the first correlation characteristic indicating correlation between a drive frequency of the drive source and the air pressure of  
25 pressurized air produced in the air pump unit, the first ambient

temperature indicating an ambient temperature of the air pump unit when the first correlation characteristic is acquired;

a temperature sensing unit that senses ambient temperature of the air pump unit; and

5 a control unit configured to set the ambient temperature sensed by the temperature sensing unit as a second ambient temperature, to make a correction to the first correlation characteristic according to the first and second ambient temperatures, and to control the drive source on the basis of  
10 the corrected first correlation characteristic so that a predetermined air pressure is produced.

10. The ink jet printer as claimed in claim 9,

wherein the storage unit stores a second correlation  
15 characteristic indicating a correlation between duty ratio of a drive pulse for driving the drive source and the drive frequency of the drive source; and

the control unit is configured to determine the drive frequency of the drive source on the basis of the corrected  
20 first correlation characteristic, and to determine the duty ratio according to the drive frequency of the drive source and the second correlation characteristic.

11. The ink jet printer as claimed in claim 9,

25 wherein the air pump unit includes an air pump, an ejection

tube that communicates the air pump with the ink cartridge and an orifice that communicates the ejection tube with the atmosphere.

5 12. A control method of a drive source for driving an air pump unit to produce pressurized air in a pressure production unit, the control method comprising:

finding a first correlation characteristic indicating correlation between a drive frequency of the drive source and  
10 the air pressure of pressurized air produced in the air pump unit;

finding a first ambient temperature, the first ambient temperature indicating an ambient temperature of the pump unit when the first correlation characteristic is acquired;

15 sensing a second ambient temperature, the second ambient temperature indicating a current ambient temperature of the pump unit;

correcting the first correlation characteristic based on the first and second ambient temperatures; and

20 controlling the drive source on the basis of the corrected first correlation characteristic so that a predetermined air pressure is produced.

13. The control method as claimed in claim 12, further  
25 comprising:

finding a second correlation characteristic indicating correlation between the duty ratio of a drive pulse for driving the drive source and drive frequency of the drive source;

wherein the controlling step includes: determining the  
5 drive frequency of the drive source based on the corrected first correlation characteristic; and determining the duty ratio of the drive pulse based on the drive frequency and the second correlation characteristic.

10 14. The control method as claimed in claim 13,

wherein the second correlation characteristic is acquired before the air pump unit and the drive source are assembled into the pressure production unit.

15 15. The control method as claimed in claims 12,

wherein the step of finding the first correlation characteristic is executed before the air pump unit and the drive source are assembled into the pressure production unit.

20 16. The control method as claimed in claim 12,

wherein, in the controlling step, the drive frequency of the drive source is controlled so that the operation frequency of the air pump unit becomes less than the audible range of human hearing.

17. The control method as claimed in claim 16,  
wherein, in the controlling step, the drive frequency  
of the drive source is controlled so that the operation frequency  
of the air pump unit becomes 20 Hz or less.

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18. The control method as claimed in claim 12,  
wherein the step of finding the first correlation  
characteristic is executed in a state that the air pump and  
the drive source are integrated.

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19. A control method of a drive source for driving an air  
pump unit in an ink jet printer, wherein the ink jet printer  
includes an ink cartridge that stores ink, and a record head  
which selectively ejects the ink supplied from the ink cartridge  
15 onto a record medium; and the air pump unit produces pressurized  
air to pressure the ink in the ink cartridge; the control method  
comprising:

finding a first correlation characteristic indicating  
correlation between a drive frequency of the drive source and  
20 the air pressure of pressurized air produced in the air pump  
unit;

finding a first ambient temperature, the first ambient  
temperature indicating an ambient temperature of the pump unit  
when the first correlation characteristic is acquired;

25 sensing a second ambient temperature, the second ambient

temperature indicating a current ambient temperature of the pump unit;

correcting the first correlation characteristic based on the first and second ambient temperatures; and

5 controlling the drive source on the basis of the corrected first correlation characteristic so that a predetermined air pressure is produced.

20. A pressure production unit, comprising:

10 an air pump unit for producing pressurized air;

a drive source for driving an air pump unit;

storing means for storing a first correlation characteristic and a first ambient temperature, the first correlation characteristic indicating correlation between a drive frequency of the drive source and the air pressure of the pressurized air produced in the air pump unit, the first ambient temperature indicating an ambient temperature of the pump unit when the first correlation characteristic is acquired;

sensing means for sensing a second ambient temperature,

20 the second ambient temperature indicating a current ambient temperature of the pump unit;

correcting means for correcting the first correlation characteristic based on the first and second ambient temperatures; and

25 controlling means for controlling the drive source on

the basis of the corrected first correlation characteristic so that a predetermined air pressure is produced.